

1 What is claimed is:

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3 1. A hinge for positioning a left panel and a right panel, the  
4 hinge comprising,

5 an inflatable bladder for encapsulating an inflation  
6 material,

7 a top film extending between the left and right panels and  
8 encapsulating a curing resin, and

9 a bottom film extending between the left and right panels,  
10 the top film and bottom film are circumferentially disposed  
11 about the bladder, the top film having a top circumferential  
12 length, the bottom film having a bottom circumferential length,  
13 the top and bottom circumferential lengths for angularly  
14 positioning the left and right panels.

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16 2. The hinge of claim 1 further comprising,

17 a flex circuit extending from the left panel and around the  
18 bladder for electrically routing power from the left panel.

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21 3. The hinge of claim 1 wherein,

22 the inflation material is a sublimation powder disposed in  
23 the bladder for inflating the bladder.

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26 4. The hinge of claim 1 further comprising,

27 a reflective coating disposed on the bladder for reflective  
28 UV light into the curing resin.

1 5. The hinge of claim 1 further comprising,  
2 a left frame for securing the left panel to the top film and  
3 to the bottom film and to the bladder, and  
4 a right frame for securing the right panel to the top film  
5 and to the bottom film and to the bladder.

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7 6. The hinge of claim 1 further comprising,  
8 a left frame for supporting the left panel to the top film  
9 and to the bottom film and to the bladder,  
10 a left adhesive layer for securing the left frame to the  
11 left panel and to the top film and to the bottom film and to  
12 the bladder,  
13 a right frame for supporting the right panel to the top film  
14 and to the bottom film and to the bladder, and  
15 a right adhesive layer for securing the right frame to the  
16 right panel and to the top film and to the bottom film and to  
17 the bladder.

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19 7. The hinge of claim 1 further comprising,  
20 a flex circuit extending from the left panel and around the  
21 bladder for electrically routing power from the left panel,  
22 a plurality of ground pads disposed on the top and bottom  
23 films,  
24 a plurality of extensions comprising conductive traces  
25 extending from the flex circuit to the plurality of ground  
26 pads, respectively, for distributively grounding the hinge.

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1       8. The hinge of claim 1 further comprising,  
2            a flex circuit extending from the left panel and around the  
3        bladder for electrically routing power from the left panel,  
4            a plurality of ground pads disposed on the top and bottom  
5        films and disposed on and under the left and right panels, and  
6            a plurality of extensions comprising conductive traces  
7        extending from the flex circuit to the plurality of ground  
8        pads, respectively, for grounding the hinge.

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10      9. The hinge of claim 1 further comprising,  
11            a flex circuit extending from the left panel and around the  
12        bladder for electrically routing power from the left panel, the  
13        left panel being a solar cell panel comprising a silver contact  
14        and a thin film solar cell, the flex circuit comprising a  
15        conductor trace connected the silver contact for routing power  
16        from the left panel and around the bladder.

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18      10. The hinge of claim 1 wherein the curing resin is cured by  
19        exposure to UV light, the hinge further comprising,  
20            a coating disposed over the top and bottom films for passing  
21        UV light and for conducting static electrical charge.

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24      11. The hinge of claim 1 wherein the curing resin is cured by  
25        exposure to UV light, the hinge further comprising,  
26            a transparent coating disposed over the hinge for passing UV  
27        light and for conducting static electrical charge, the coating  
28        comprising indium tin oxide and magnesium fluoride.

1 12. The hinge of claim 1 further comprising,  
2 a flex circuit extending from the left panel and around the  
3 bladder and comprising a trace conductor for electrically  
4 routing power from the left panel having a electrical contact  
5 and around the bladder, and  
6 a wrap around contact for electrically connecting the  
7 electrical contact and the trace conductor.

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11 13. A hinge for positioning a left panel and a right panel, the  
12 hinge comprising,

13 a top film for encapsulating a curing resin, the curing  
14 resin cured by exposure to UV light, the top film having a top  
15 circumferential length for defining the position between the  
16 left and right panels, and  
17 a coating disposed over the top film for passing the UV  
18 light for curing the curing resin and for static discharge  
19 protection of the film.

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22 14. The hinge of claim 13, the hinge further comprising,  
23 a bottom film, the top film and bottom films are  
24 circumferentially disposed about the bladder, the bottom film  
25 having a bottom circumferential length, the top and bottom  
26 circumferential length defining the position between the left  
27 and right panels,

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1 15. The hinge of claim 13, wherein,  
2 the coating comprises indium tin oxide and magnesium  
3 fluoride.

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5 16. A hinge for positioning a left panel and a right panel, the  
6 hinge comprising,  
7 a curing resin,  
8 a top film coupled to the left and right panels and for  
9 encapsulating the curing resin, the curing resin being cured by  
10 exposure to UV light, the top film having a top circumferential  
11 length for defining the angular position between the left and  
12 right panels.

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